What is claimed is:

1. An image-taking apparatus comprising:

an image sensor for converting an optical image into an electrical signal; and

a taking lens system for forming the optical image on a light-receiving surface of the image sensor;

wherein a most object-side surface of the taking lens system is an aspherical surface that has a positive optical power in a central portion thereof and a negative optical power in a peripheral portion thereof, and

wherein the following condition is fulfilled:

$$-90 < Da < -20$$

where

Da represents distortion (%) observed at a maximum half view angle in a diagonal direction of the image sensor.

2. An image-taking apparatus as claimed in claim 1,

wherein the following conditions are fulfilled:

$$0.05 < | f / f_{asp} | < 1$$

$$0.18 < f / TL < 2$$

$$0.03 < T_{asp} / TL < 0.5$$

where

f_{asp} represents a paraxial focal length of a lens element included in the taking lens system which has the aspherical surface;

f represents a paraxial focal length of the taking lens system as a whole;

TL represents a distance along an optical axis from a vertex of the most object-side surface of the taking lens system to the light-receiving surface of the image sensor; and

T_{asp} represents a thickness along the optical axis of the lens element that has the aspherical surface.

3. An image-taking apparatus as claimed in claim 1,

wherein the following condition is fulfilled:

$$0.2 < | \Delta Zasp / \Delta Zsp | < 5$$

where

ΔZsp represents amount of spherical sag at a maximum effective aperture; and

$\Delta Zasp$ represents amount of aspherical sag at the maximum effective aperture.

4. An image-taking apparatus as claimed in claim 1,

wherein a most image-side lens element of the taking lens system has a positive optical power.

5. An image-taking apparatus as claimed in claim 1,

wherein the taking lens system comprises, from an object side to an image side thereof,

a first lens unit having a negative optical power;

a second lens unit having a positive optical power;

an aperture stop;

a third lens unit having a positive optical power; and

a fourth lens unit.

6. An image-taking apparatus as claimed in claim 5,

wherein the lens units are each composed of, at most, two lens elements or one pair of lens elements cemented together.

7. An image-taking apparatus as claimed in claim 1,

wherein a most image-side lens element and a most object-side lens element of the taking lens system are each a plastic lens element having an aspherical surface, and

wherein the most object-side lens element of the taking lens system has a negative optical power and the most image-side lens element of the taking lens system has a positive optical power.

8. An image-taking apparatus as claimed in claim 1,

wherein the following condition is fulfilled:

$$2 < [\, 21.63 \times f / (0.5 \times La) \,] / [\, 18 / \tan\theta v_{max} \,] < 10$$

where

La represents a distance from a center to a diagonal corner of the image sensor;

f represents a paraxial focal length of the taking lens system as a whole; and

θv_{max} represents a maximum half view angle in a direction along longer sides of the image sensor.

9. An image-taking apparatus as claimed in claim 1,

wherein the following condition is fulfilled:

$$0 < Dc / Da < 0.5$$

where

Dc represents distortion (%) observed on the image sensor at a maximum diagonal angle within a central region of the image.

10. An image-taking apparatus comprising:

an image sensor for converting an optical image into an electrical signal; and

a taking lens system for forming the optical image on a light-receiving surface of the image sensor, the taking lens system comprising, from an object side to an image side thereof:

a front lens unit having a positive optical power as a whole;

an aperture stop; and

a rear lens unit having a positive optical power as a whole,

wherein at least one surface included in the front lens unit is an aspherical surface that has a positive optical power in a central portion thereof and a negative optical power in a peripheral portion thereof, and

wherein the following condition is fulfilled:

$$-90 < Da < -20$$

where

Da represents distortion (%) observed at a maximum half view angle in a diagonal direction of the image sensor.

11. An image-taking apparatus as claimed in claim 10,

wherein the following conditions are fulfilled:

$$0.05 < | f / f_{asp} | < 1$$

$$0.18 < f / TL < 2$$

$$0.03 < T_{asp} / TL < 0.5$$

where

f_{asp} represents a paraxial focal length of a lens element included in the taking lens system which has the aspherical surface;

f represents a paraxial focal length of the taking lens system as a whole;

TL represents a distance along an optical axis from a vertex of the most object-side surface of the taking lens system to the light-receiving surface of the image sensor; and

T_{asp} represents a thickness along the optical axis of the lens element that has the aspherical surface.

12. An image-taking apparatus as claimed in claim 10,

wherein the following condition is fulfilled:

$$0.2 < | \Delta Zasp / \Delta Zsp | < 5$$

where

ΔZsp represents amount of spherical sag at a maximum effective aperture; and

$\Delta Zasp$ represents amount of aspherical sag at the maximum effective aperture.

13. An image-taking apparatus as claimed in claim 10,

wherein the following condition is fulfilled:

$$0 < f_f / f_r < 10$$

where

f_f represents a focal length of the front lens unit as a whole; and

f_r represents a focal length of the rear lens unit as a whole.

14. An image-taking apparatus as claimed in claim 10,

wherein a most image-side lens element of the taking lens system has a positive optical power.

15. An image-taking apparatus as claimed in claim 10,

wherein the front lens unit comprises, from an object side to an image side thereof,

a first lens unit having a negative optical power; and

a second lens unit having a positive optical power, and

wherein the rear lens unit comprises, from an object side to an image side thereof,

a third lens unit having a positive optical power; and

a fourth lens unit.

16. An image-taking apparatus as claimed in claim 15,

wherein the lens units are each composed of, at most, two lens elements or one pair of lens elements cemented together.

17. An image-taking apparatus as claimed in claim 10,

wherein a most image-side lens element and a most object-side lens element of the taking lens system are each a plastic lens element having an aspherical surface, and

wherein the most object-side lens element of the taking lens system has a negative optical power and the most image-side lens element of the taking lens system has a positive optical power.

18. An image-taking apparatus as claimed in claim 10,

wherein the following condition is fulfilled:

$$2 < [\, 21.63 \times f / (0.5 \times La) \,] / [\, 18 / \tan\theta v_{max} \,] < 10$$

where

La represents a distance from a center to a diagonal corner of the image sensor;

f represents a paraxial focal length of the taking lens system as a whole; and

θv_{max} represents a maximum half view angle in a direction along longer sides of the image sensor.

19. An image-taking apparatus as claimed in claim 10,

wherein the following condition is fulfilled:

$$0 < Dc / Da < 0.5$$

where

Dc represents distortion (%) observed on the image sensor at a maximum diagonal angle within a central region of the image.

20. A camera comprising an image-taking apparatus as claimed in claim 1 or 10,

wherein the camera has at least one of a capability of shooting a still picture and a capability of shooting a moving picture.

21. A camera as claimed in claim 20, further comprising:

a rotating mechanism for rotating the image-taking apparatus at least in one direction to change a shooting direction of the image-taking apparatus.

22. A camera system comprising:

an image-taking apparatus as claimed in claim 1 or 10; and

an image processor for correcting distortion,

wherein the image processor converts the electrical signal representing the optical image into image data of an image that is roughly similar to a scene perceived by a human eye and that is substantially distortionless.